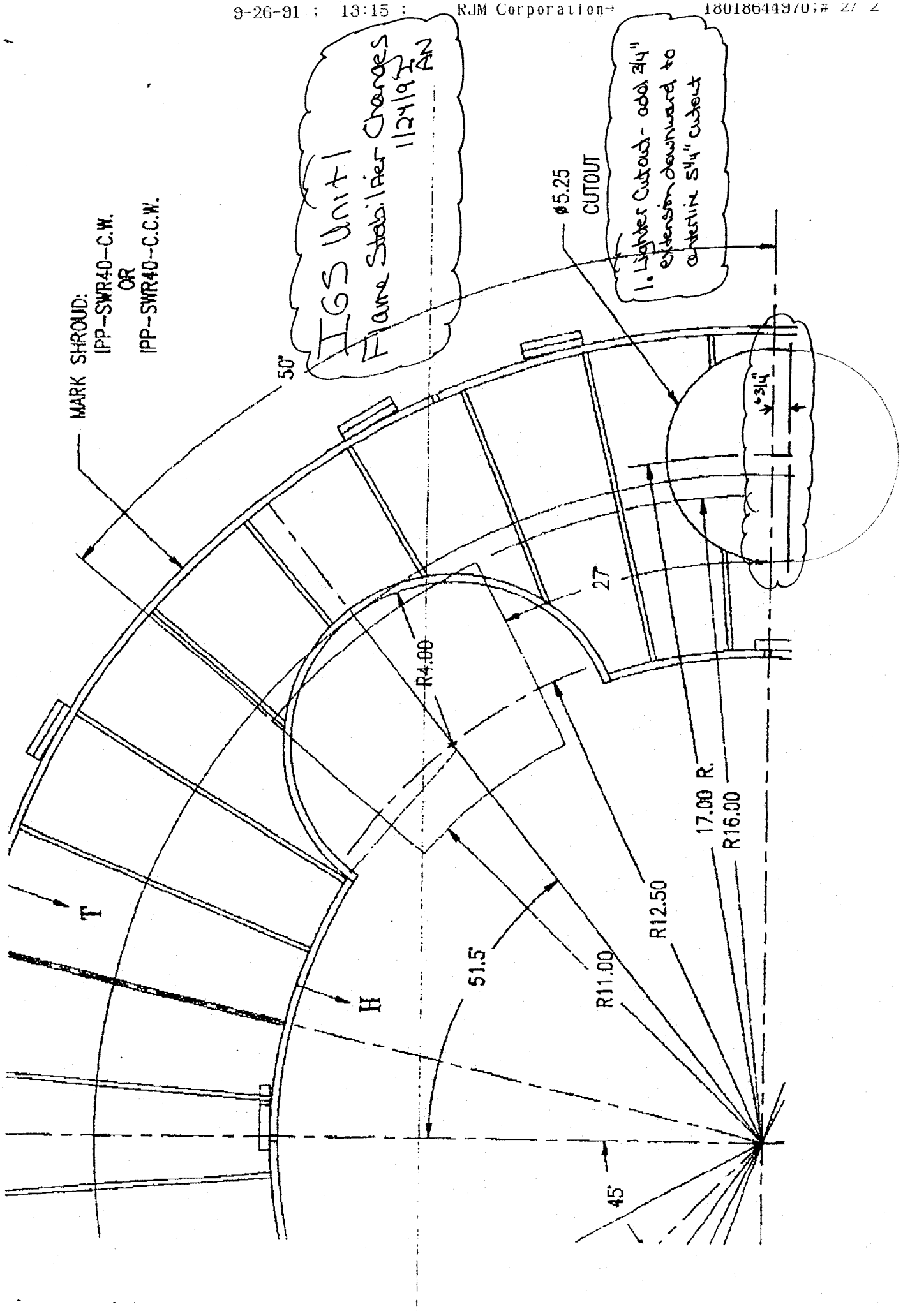
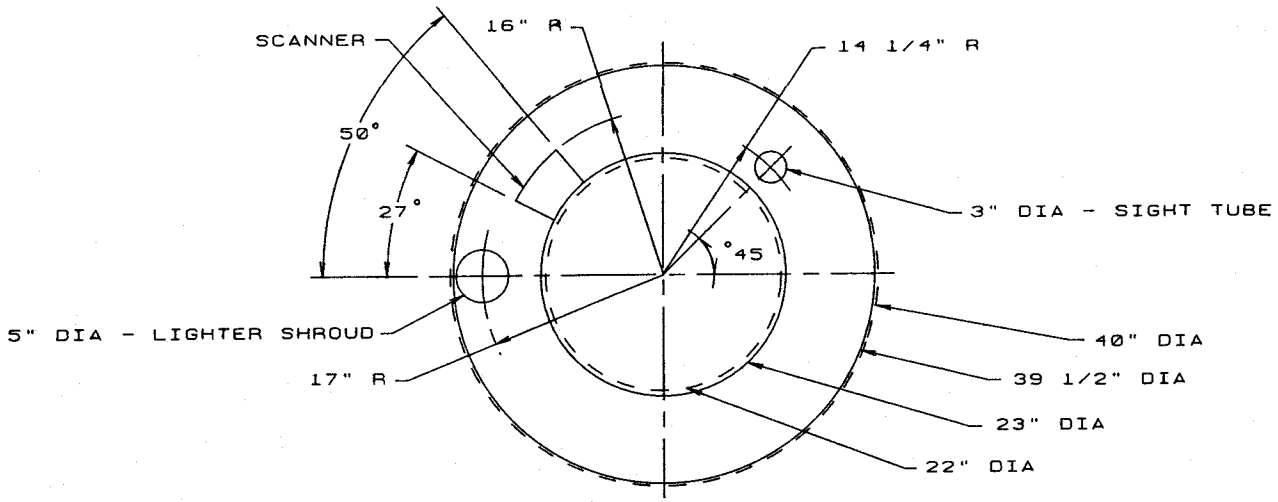
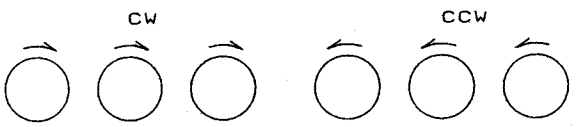
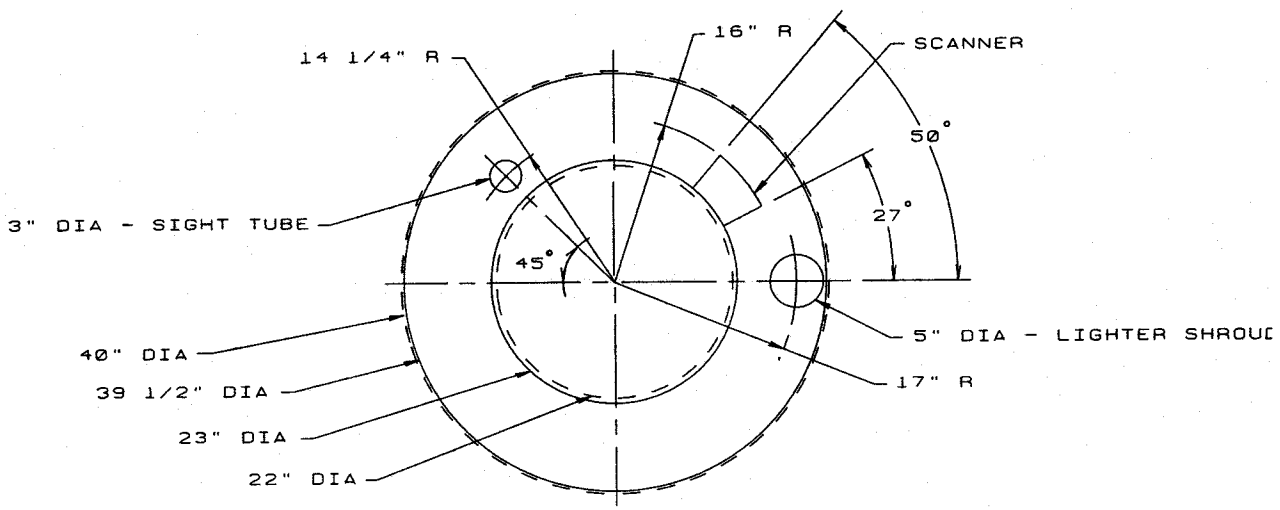

HGS Unit
Flame Stabilizer Changes
11/19/91 AM
1. Lighter Cutout - add .34" extension downward to centerline 5¼" cutout
MARK SHROUD:
IPP-SWR40-C.W.
OR
IPP-SWR40-C.C.W.
50°
Ø5.25
CUTOUT
.34"
27
R4.00
17.00 R.
R16.00
R12.50
R11.00
51.5°
45°
T
H

IP7_001666



CCW STABILIZER





CW STABILIZER

FLAME STABILIZER CUTOUT TEMPLATE

NOTE: LOOKING AT BURNER FRONT (INTO BOILER)

Revised (clarified)

IP7_001667

2.0 DESCRIPTION OF SYSTEM

The Burner and Mill Controls System consists of the following components for each generating unit.

(1) Control and indicator subpanels.

(2) System logic cabinets.

(3) Flame monitoring equipment.

(4) Miscellaneous instrumentation to provide inputs to system logic.

Control and indicator subpanels are provided for operator interface with the system, allowing the operator to remotely control and monitor the operation of each of the eight burner levels. Both startup and shutdown of the equipment is initiated by the operator through the control and indicator subpanels. The system logic cabinets contain the necessary logic for implementing all permissives and interlocks required to strictly enforce a safe sequence for placing the equipment for each burner level in service. Normal shutdown of the equipment also follows a safe sequence. The system continuously monitors operating conditions and will automatically trip equipment on the occurrence of any unsafe operating condition.

Before the Burner and Mill Controls System will permit introduction of fuel into the furnace, the furnace must be purged of all combustibles. The system monitors the purging operation to ensure that all permissives are maintained including an airflow of 40 percent through the furnace for a duration of at least five minutes. An output of the Burner and Mill Controls System is interlocked with the Unit Protection System to ensure that the unit trip relays will not be reset until the purge has been completed. The status of each purge permissive and of the purging operation is displayed on an indicator subpanel.

The flame monitoring equipment monitors igniter and coal burner flames on each of the 48 burners. Upon detection of unsafe flame conditions, the system logic will trip individual burners, burner groups (3 burners per group), burner levels (6 burners or 2 burner groups per level) or the unit trip relays depending on the severity of the conditions. Individual flame intensities are displayed for a selected burner level on an indicator subpanel.

3.0 DESCRIPTION OF MAJOR COMPONENTS

3.1 CONTROL AND INDICATOR SUBPANELS

Each of the eight pulverizer control stations and the purge station are Bailey Controls Company Network 90 logic stations, with prefabricated cables connecting to the system logic cabinets.

The Flamon Indicator Panel consists of six Weston Model 121 voltmeters and a rotary switch to select the pulverizer group burner flames to be monitored. A prefabricated cable connects the panel to a system logic cabinet.

3.2 SYSTEM LOGIC CABINETS

Ten sections of Bailey Controls Company Network 90 cabinets contain all system logic, input/output devices, terminals and power supplies. Logic for two pulverizers are contained in a cabinet section utilizing the front for one pulverizer and the rear for the other. Field terminations for the two pulverizers are contained in a second adjacent section. Thus, eight cabinet sections are utilized for the eight pulverizer groups and the remaining two sections both contain common logic and terminations.

3.3 FLAME DETECTOR RECEIVERS

A Bailey Controls Company Type UM Flamon receiver is provided for each group of three burners. Each burner is monitored by a Type UW Flamon ultraviolet/flicker detector assembly. The receiver is located near the burner front and provides logic outputs to the system logic cabinets to indicate "flame-on" or "flame-out" and analog outputs proportional to the measurable properties of the flame.